

## Exploring social tariffs for energy

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### Summary

A social tariff that reduces the cost of fuel for low-income households could, in principle, more than halve the fuel poverty rate. This achieves much more than the existing cost-of-living payments. It would cost more than the existing cost-of-living mitigations being paid to social security recipients, but it would be much more cost-effective.

The big question that remains to be answered is how to operationalise it? How can the energy companies and the government know which households have low incomes?

### Background

OFGEM (the energy regulator) and the Department for Energy Security and Net Zero are currently reviewing the prospects for introducing a social tariff to reduce fuel poverty among vulnerable energy consumers to be introduced from April 2024. This paper is a contribution to their review.

A social tariff as defined by the Chief Executive of OFGEM is:

*a tariff that is set at a different rate for vulnerable customers and protects against the impact of extremely high prices. If it can be made to work, this could tackle the root cause of this issue and the distress that many customers are in this winter.*<sup>1</sup>

In April the £400 rebate through the energy bills support scheme to all households ran out. Table 1 shows that the mean weekly household expenditure on fuel has risen from £32.67 per week to £48.05 per week for those not eligible for a cost of living (CoL) payment, and to £42.81 for those who are eligible.

**Table 1: Mean and median weekly household expenditure on fuel over time, with energy price guarantee at £2,500**

	Actual 20/21	October 2022 (with rebate), EPG at £2,500	April 2023 (before CoL payments), EPG at £2,500	April 2023 (after CoL payments), EPG at £2,500
<b>Mean (£)</b>	23.50	32.67	48.05	42.81
<b>Median (£)</b>	20.77	27.09	42.47	37.75

Own analysis based on Living Costs and Food Survey (LCFS) 2020/21 data

<sup>1</sup> J Brearley, '[Tackling inappropriate energy supplier prepayment meter practices](#)', Ofgem, 23 January 2023

We have shown [in an earlier paper](#) that if there had been no mitigations for social security recipient households, with the energy price guarantee (EPG) remaining at the level of £2,500 for a typical household’s consumption, 20 per cent of households would be fuel poor (defined as spending more than 20 per cent of net equivalised household income after housing costs on fuel)<sup>2</sup> from April 2023. Table 2 shows that the mitigations<sup>3</sup> (£300 for pensioners, £150 for people with disability benefits and £900 for people receiving means-tested benefits) will reduce fuel poverty by 5.2 percentage points or 26 per cent. Sixty-eight per cent of all fuel poor households will receive these cost-of-living payments but that leaves 32 per cent (or 1.77 million households) not receiving the payments.<sup>4</sup>

**Table 2: Fuel stress and fuel poverty rates before and after mitigation after April 2023**

	Before cost-of-living mitigations	After cost-of-living mitigations	Effect of mitigations
<b>Fuel stress:</b> spending more than 10% of net income on fuel	54.6%	45.6%	- 9% points
<b>Fuel poverty:</b> spending more than 20% of net income on fuel	20.0%	14.8%	-5.2% points

Own analysis based on LCFS 2020/21 data

### Social tariffs

Social tariffs have been advocated by NGOs with an interest in fuel poverty as a way of more effectively tackling fuel poverty.

Since August 2022 we have been producing papers on household fuel poverty based on the secondary analysis of the ONS Living Costs and Food Survey (LCFS).<sup>5</sup> Among these was a paper on social tariffs which compared the impact of a simple progressive social tariff (lower tariffs for smaller consumers paid for either by higher tariffs for larger consumers or by the taxpayer) with policies providing direct support by increasing the incomes of social security recipients. Broadly we concluded that enhancing social security incomes was a better strategy, though far from perfect.<sup>6</sup>

To summarise: the problems are (1) not all the fuel poor are small consumers; (2) not all social security recipients are in fuel poverty; (3) not all households in fuel poverty are social security recipients; and (4) neither the government nor fuel providers know who the ‘vulnerable customers’ are.

<sup>2</sup> The term ‘severely fuel poor’ is used in Wales and Scotland for the 20 per cent definition, but for simplicity we will just use the term ‘fuel poor’ in this paper.

<sup>3</sup> The social security mitigations are going to increase income rather than reduce expenditure for those eligible, but for analytical reasons, in order to see their impact on fuel poverty we have adjusted fuel expenditure in our analysis.

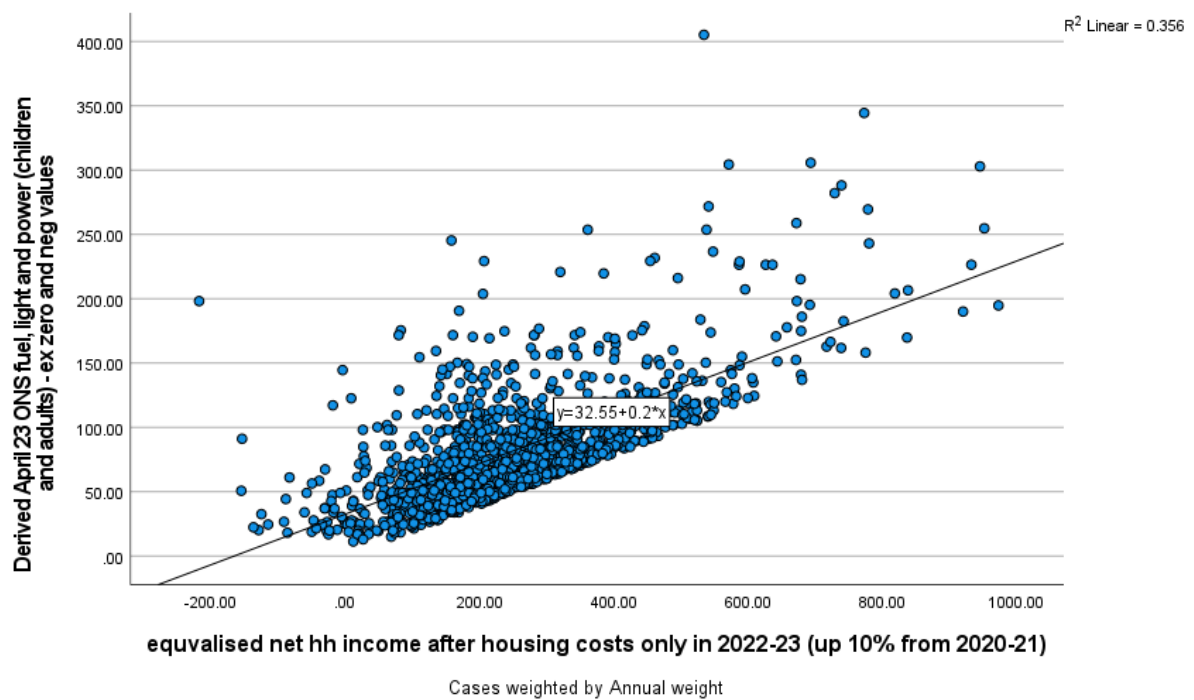
<sup>4</sup> A Keung and J Bradshaw, [Who are the fuel poor?](#), CPAG, 21 March 2023

<sup>5</sup> See J Bradshaw and A Keung, [‘Rising fuel poverty’](#), Poverty, CPAG, 173, 2022, and A Keung and J Bradshaw, [‘Fuel poverty estimates for April 2023 following the Autumn Statement, including social security mitigations’](#), CPAG, 9 December 2022

<sup>6</sup> J Bradshaw, A Keung, [Is a social tariff for energy feasible and effective?](#) University of York: SPRU, 2022

Figure 1 illustrates the problem. It shows the relationship between fuel bills and the net incomes of households who are in fuel poverty (spending more than 20 per cent of net income on fuel). Net income only explains 36 per cent of the variation in household fuel expenditure.

**Figure 1: Scatterplot of household fuel expenditure by household net income, for households in fuel poverty**



Figures 2 and 3 show the relationship between fuel poverty and income decile. We use two definitions – the traditional threshold of spending more than 10 per cent of net income on fuel (fuel stress) and a higher threshold of spending more than 20 per cent of net income on fuel (fuel poverty).

Figure 2 shows that if we seek to mitigate 50 per cent of fuel stress it would be necessary to extend mitigation to 70 per cent of households. Figure 3 shows that we could mitigate 50 per cent of fuel poverty by subsidising the bottom 20 per cent of households.

Figure 2: Fuel stress by income decile

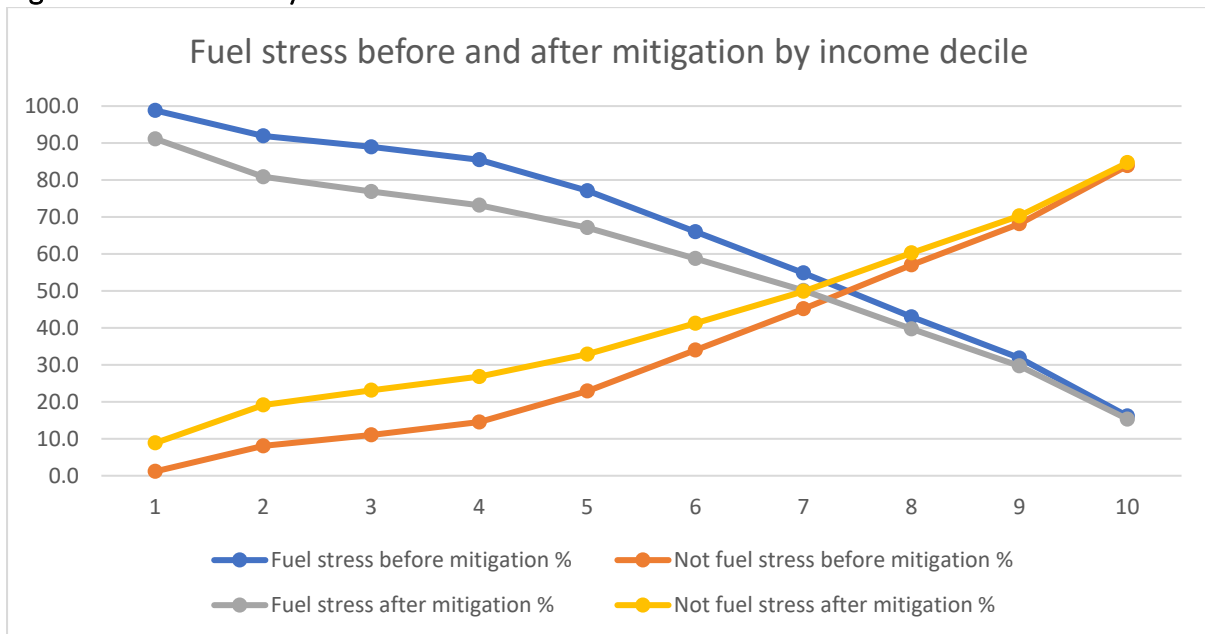
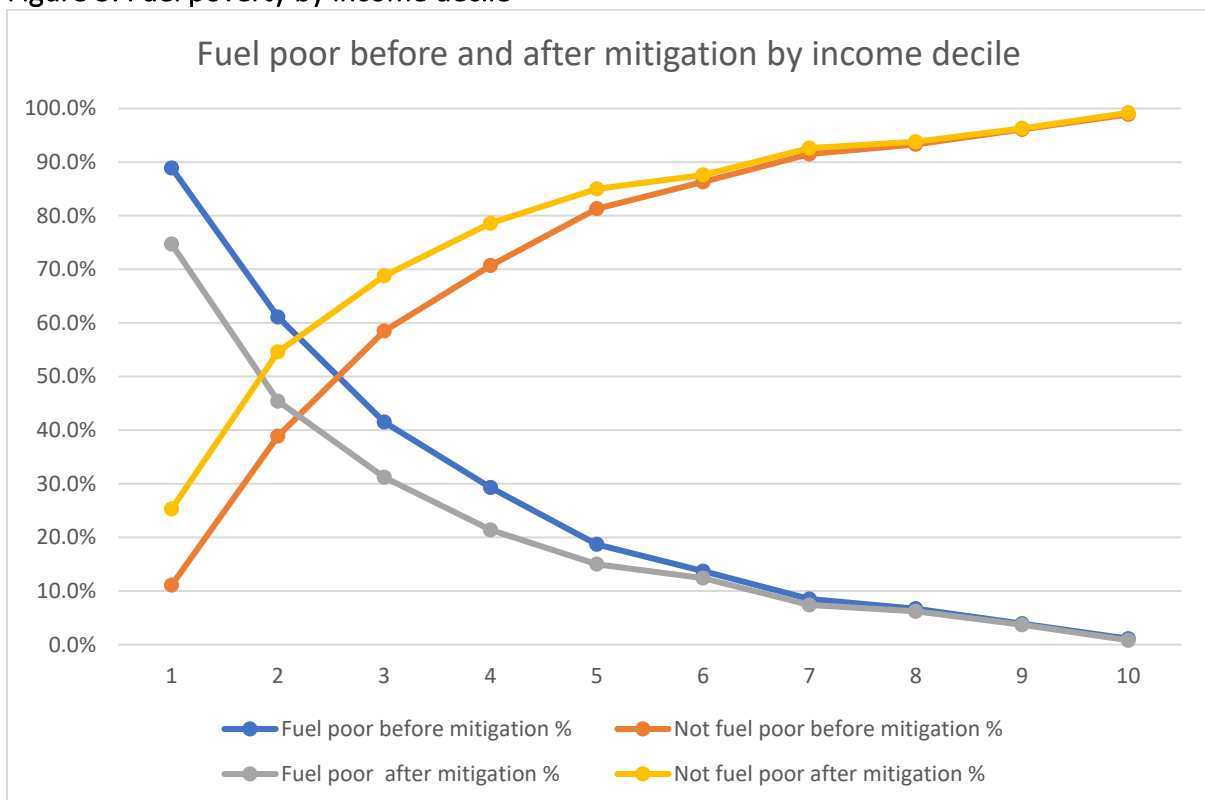


Figure 3: Fuel poverty by income decile



In this paper we update and extend our analysis of social tariff options.

## Options

No one has yet specified what a social tariff for the UK might look like. There appear to us to be three main options.

The two options we tried in our earlier analysis:<sup>7</sup>

1. £x off all bills (say equivalent to abolishing the standing charges/prepayment premiums).
2. £x off the bills of low-income consumers (but where to draw the line?)

A third option:

3. Reducing bills for lower-income households by a percentage which declines as income rises. We have not tried this before on the grounds mentioned above – that we did not think energy suppliers or the indeed the government knew enough about household incomes. But it has been suggested that it may be possible – the government already informs suppliers whether households are eligible for the warm homes discount scheme, although that is only available to households on means-tested benefits.

Having consulted National Energy Action (NEA), we decided to review the impact of six variations which reduced the fuel bills of households in the lower deciles of the distribution of net household income by varying percentages. Table 3 compares the impact on fuel poverty rates of each of these proposed options. We found that option 3 had the biggest impact reducing the fuel poverty rate from 20 per cent to 9.2 per cent. The impact of the social tariff was considerably more than the social security mitigations.

In the rest of the paper we focus on social tariff 3.

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<sup>7</sup> See note 6.

Table 3: The impact of a variety of social tariff models on the fuel poverty rate

	EPG at £2,500, before CoL mitigation	EPG at £2,500, after CoL mitigation	Social tariff models					
Income Decile	Fuel poverty rate	Fuel poverty rate	Proposal 1	Proposal 2	Proposal 3	Proposal 4	Proposal 5	Proposal 6
1	83%	64%	Reduce fuel bills by 50%	Reduce fuel bills by 50%	Reduce fuel bills by 60%	Reduce fuel bills by 50%	Reduce fuel bills by 50%	Reduce fuel bills by 50%
2	48%	31%	Reduce fuel bills by 30%	Reduce fuel bills by 30%	Reduce fuel bills by 40%	Reduce fuel bills by 40%	Reduce fuel bills by 40%	Reduce fuel bills by 50%
3	27%	21%	Reduce fuel bills by 20%	Reduce fuel bills by 20%	Reduce fuel bills by 30%	Reduce fuel bills by 30%	Reduce fuel bills by 30%	Reduce fuel bills by 50%
4	18%	12%		Reduce fuel bills by 10%	Reduce fuel bills by 20%		Reduce fuel bills by 20%	
5	10%	6%					Reduce fuel bills by 10%	
6	7%	6%						
7	4%	3%						
8	3%	3%						
9	3%	3%						
10	1%	1%						
<b>Overall fuel poverty rate</b>	20%	15%	<b>12.6%</b>	<b>12%</b>	<b>9.2%</b>	<b>11.3%</b>	<b>9.9%</b>	<b>10.2%</b>
<b>N</b>	5,560,000	4,100,000	<b>3,496,000</b>	<b>3,326,000</b>	<b>2,543,000</b>	<b>3,132,000</b>	<b>2,743,000</b>	<b>2,828,000</b>

First in Table 4 we show that if the cost-of-living social security mitigations were included with the social tariff it would only reduce overall fuel poverty by an extra two percentage points, which indicates that the social tariff is pretty well targeted on the fuel poor. However the cost-of-living mitigations as expected give bigger extra reductions in fuel poverty for the lowest decile groups. This is an argument for increasing the level of social security benefits generally.

**Table 4: Impact of social tariff 3 with and without social security mitigation**

	EPG at £2,500 Before CoL mitigation	EPG at £2,500 After CoL mitigation	<b>Social tariff 3</b> EPG at £2,500, <b>before</b> CoL mitigation	<b>Social tariff 3</b> EPG at £2,500, <b>after</b> CoL mitigation
	Fuel poverty rate	Fuel poverty rate	Fuel poverty rate	Fuel poverty rate
Decile				
1	83%	64%	34%	26%
2	48%	31%	15%	10%
3	27%	21%	9%	7%
4	18%	12%	7%	6%
5	10%	6%	10%	6%
6	7%	6%	7%	6%
7	4%	3%	4%	3%
8	3%	3%	3%	3%
9	3%	3%	3%	3%
10	1%	1%	1%	1%
Overall	<b>20%</b>	<b>15%</b>	<b>9%</b>	<b>7%</b>
N	5,560,000	4,100,000	<b>2,543,000</b>	<b>1,900,000</b>

Table 5 compares the estimated fuel poverty rates across different scenarios of energy cost support by household characteristics. It becomes clear that our proposed energy social tariff may, in principle, be much better at targeting support to households most vulnerable to fuel poverty than the cost-of-living payment.

We know that lower-income households are more affected by fuel poverty as can be seen in Table 5. With the implementation of the energy price guarantee alone at the level of £2,500 for a typical household’s consumption, our calculation estimates over 80 per cent of households from the lowest income decile would be fuel poor. Moreover, almost half of all households from the second income decile would be fuel poor, over a quarter from the third decile and nearly a fifth from the fourth decile. Our comparisons in Table 5 shows that while cost-of-living payments do appear to reach some of the fuel poor households from the lower income decile, the proposed energy social tariff could do much better and more substantially bring the fuel poverty rates down.

Our analysis identified that the proposed energy social tariff is also better able to reduce energy costs and therefore fuel poverty rates among couple households with two or more dependent children and lone parent households, both of which we previously identified as

being far more at risk of fuel poverty than other types of household.<sup>8</sup> Broadly speaking, the social tariff we propose could reduce the scale of fuel poverty among couple households with two or more children and lone parent households by 56 per cent and 63 per cent respectively. This is a much higher percentage of reduction than could be achieved by the cost-of-living payments for these households, at 25 per cent and 35 per cent respectively.

Table 5 also includes comparisons by ethnicity, tenure type, income poverty status and so on. All consistently show that our energy social tariff is better at mitigating fuel poverty than the cost-of-living payment. Importantly, as shown in our earlier paper,<sup>9</sup> we estimated that 1.77 million fuel poor households would not get the cost-of-living payment, whereas our proposed energy social tariff would reach 82 per cent of them. We recognise that the 18 per cent remaining are most probably those fuel poor households with a large energy bill, but from the top half of the income distribution. We decided not to factor this group into our social tariffs as our analysis in this paper (see Table 3) shows that they are relatively less affected by fuel poverty than households from the lower income deciles.

**Table 5: Comparing fuel poverty rates: social tariff 3 vs cost-of-living payment**

Key variables		Fuel poverty rate with EPG at £2,500 only		Fuel poverty rate with EPG at £2,500 and cost-of-living payment		Fuel poverty rate with EPG at £2,500 and social tariff 3	
		Count (000s)	%	Count (000s)	%	Count (000s)	%
<b>Income decile</b>							
	1	2,229	82.6	1,740	64.4	914	33.9
	2	1,336	48.1	864	31.1	419	15.1
	3	732	26.5	570	20.7	258	9.4
	4	504	18.1	342	12.2	193	6.9
	5	274	9.9	178	6.4	274	9.9
	6	207	7.4	174	6.3	207	7.4
	7	100	3.6	73	2.6	100	3.6
	8	88	3.2	72	2.6	88	3.2
	9	70	2.5	70	2.5	70	2.5
	10	19	0.7	17	0.6	19	0.7
	<b>Total</b>	<b>5,559</b>	<b>20.0</b>	<b>4,100</b>	<b>14.8</b>	<b>2,542</b>	<b>9.2</b>
<b>Household type (brief)</b>							
	Single	938	22.2	665	15.7	409	9.7
	Couple	556	10.6	476	9.0	232	4.4
	Households with dependent children	1,879	28.2	1,388	20.8	805	12.1
	Pensioners	1,585	18.0	1,071	12.2	712	8.1
	Other multi-unit	601	21.7	499	18.0	384	13.9
	<b>Total</b>	<b>5,559</b>	<b>20.0</b>	<b>4,099</b>	<b>14.8</b>	<b>2,542</b>	<b>9.2</b>

<sup>8</sup> See note 4.

<sup>9</sup> See note 4.



<b>Household type (detailed)</b>							
	Single	938	22.2	665	15.7	409	9.7
	Couple	556	10.6	476	9.0	232	4.4
	Couple with 1 child	405	20.1	330	16.3	192	9.5
	Couple with 2 children	545	21.7	429	17.1	205	8.1
	Couple with 3 children	303	36.9	225	27.4	149	18.1
	Couple with 4 or more children	113	61.1	69	37.1	67	36.0
	Lone parent with 1 child	206	39.2	144	27.4	57	10.8
	Lone parent with 2 or more children	307	50.7	191	31.6	135	22.3
	Pensioner, single	720	18.9	482	12.6	255	6.7
	Pensioner couple	695	16.3	488	11.5	361	8.5
	Other pensioner (i.e. pensioner only with children or pensioners living in multi-unit)	169	23.1	102	13.9	96	13.1
	Other (multi-unit)	601	21.7	499	18.0	384	13.9
<b>Total</b>		<b>5,558</b>	<b>20.0</b>	<b>4,100</b>	<b>14.8</b>	<b>2,542</b>	<b>9.2</b>
<b>Region</b>							
	North East	307	25.6	192	16.0	116	9.7
	North West and Merseyside	533	17.1	353	11.3	217	7.0
	Yorkshire and the Humber	557	22.4	397	16.0	260	10.5
	East Midlands	338	15.2	287	12.9	120	5.4
	West Midlands	453	19.3	314	13.4	195	8.3
	Eastern	543	21.0	427	16.5	283	10.9
	London	783	23.9	574	17.5	411	12.5
	South East	551	15.0	432	11.7	242	6.6
	South West	487	20.5	354	14.9	241	10.1
	Wales	290	23.0	210	16.7	80	6.3
	Scotland	520	21.1	405	16.4	257	10.4
	Northern Ireland	197	27.3	156	21.6	123	17.0
<b>Total</b>		<b>5,559</b>	<b>20.0</b>	<b>4,101</b>	<b>14.8</b>	<b>2,545</b>	<b>9.2</b>
<b>Ethnic origin of head of household</b>							
	White	3,203	19.1	2,383	14.2	1,515	9.0
	Mixed race	79	32.4	63	25.7	43	17.6
	Asian or Asian British	181	21.4	119	14.1	70	8.3
	Black or Black British	107	35.5	83	27.7	50	16.6
	Other ethnic group	110	40.0	105	38.2	56	20.3
<b>Total</b>		<b>3,680</b>	<b>20.0</b>	<b>2,753</b>	<b>14.9</b>	<b>1,734</b>	<b>9.4</b>
<b>Tenure type</b>							
	Local authority	731	40.7	486	27.0	282	15.7
	Housing association	838	39.3	555	26.0	395	18.5
	Private rented	1,382	28.5	1,008	20.8	505	10.4

	Owned/ mortgaged/ outright	2,521	13.5	1,980	10.6	1,325	7.1
	Rent free	86	29.9	71	24.7	36	12.5
Total		5,558	20.0	4,100	14.8	2,543	9.2
<b>Income poverty</b>							
	No (i.e. $\geq 60\%$ median income)	1,368	6.8	1,012	5.0	1,001	5.0
	Yes (i.e. $< 60\%$ median income)	4,192	54.5	3,088	40.1	1,542	20.0
Total		5,560	20.0	4,100	14.8	2,543	9.2
<b>CoL payment recipient group</b>							
	Means-tested CoL only	1,683	56.3	948	31.7	662	22.2
	Disability CoL only	144	24.5	131	22.3	66	11.2
	Pensioner CoL only	1,097	16.2	887	13.1	506	7.5
	Means-tested + disability CoL	381	39.5	181	18.8	182	18.9
	Means-tested + pensioner CoL	217	38.1	85	14.9	81	14.2
	Disability + pensioner CoL	209	19.3	85	7.9	86	7.9
	Means-tested + disability + pensioner CoL	62	15.5	14	3.5	39	9.7
	Not receiving mitigation	1,768	12.3	1,768	12.3	321	6.4
Total		5,561	20.0	4,099	14.8	2,543	9.2

How much would a social tariff cost the taxpayer (assuming it is funded from general revenue) compared with the existing cost-of-living payments?

In Table 6 we show the costs of the cost-of-living payments total about £136 million per week. Most of that expenditure is focussed on lower-income households but because richer pensioners receive cost-of-living payments expenditure also benefits households in the top deciles of net income.

**Table 6: Estimates of the costs of cost-of-living payments by decile of net household income**

Decile	Median weekly fuel cost with EPG at £2,500 (£)	Median CoL payments weekly sum (£)	Eligible number of household (000s)	Sub-total (£)
1	38	17	1,999	33,983,000
2	39	17	2,067	35,139,000
3	40	9	1,775	15,975,000
4	40	9	1,643	14,787,000
5	43	6	1,487	8,922,000
6	43	6	1,143	6,858,000
7	43	6	1,025	6,150,000
8	44	6	918	5,508,000
9	46	6	715	4,290,000
10	50	6	713	4,278,000
<b>Estimated total weekly cost of CoL payments (£)</b>				<b>135,890,000</b>

In Table 7 we present an estimate of costs to the taxpayer of social tariff 3. The total is £160 million per week, which is more than the cost-of-living payment but all that support is concentrated on households at the lower end of the income distribution.

**Table 7: Estimates of the costs of social tariff 3**

Decile	Median weekly fuel cost with EPG at £2,500 (£)	Social tariff 3	Social tariff 3 estimated median weekly cost per household to the taxpayers (£)	Number of households (000s)	Sub-total (£)
1	38	Reduce fuel bills by 60%	22.80	2,702	61,605,600
2	39	Reduce fuel bills by 40%	15.60	2,777	43,321,200
3	40	Reduce fuel bills by 30%	12	2,758	33,096,000
4	40	Reduce fuel bills by 20%	8	2,792	22,336,000
<b>Estimated total weekly cost of social tariff 3 (£)</b>					<b>160,358,800</b>

#### **Cost-effectiveness of CoL payment vs social tariff 3**

Cost-effectiveness can be calculated by dividing the cost of mitigation by the number of fuel poor households lifted out of fuel poverty. Using this formula, Table 8 shows that the average cost of lifting an extra fuel poor household out of fuel poverty on the cost-of-living payments

scheme is approximately £93 per week per household, compared to £53 per week per household on the social tariff 3 model.<sup>10</sup>

**Table 8: Estimates of the cost effectiveness of reducing fuel poverty: social tariff 3 vs cost-of-living payment**

	EPG at £2,500 and after CoL payments	EPG at £2,500 and social tariff 3 only	EPG at £2,500 and after CoL mitigation and social tariff 3
Cost of mitigation (£)	135,890,000	160,358,800	296,248,800
Number of households lifted out of fuel poverty	1,460,000	3,017,000	3,660,000
Cost-effectiveness ratio: cost per household lifted out of fuel poverty (£)	93	53	81

### Conclusion

In principle, social tariff 3 would help to bring the fuel poverty rate down from 20 per cent to 9 per cent, reducing the scale of fuel poverty by 54 per cent, at an additional cost of £24 million per week to taxpayers. This compares to the cost-of-living payments which cost £136 million a week but can only bring the fuel poverty rate down to 15 per cent (or reduce the scale of fuel poverty by 26 per cent). Our analysis suggests that the proposed social tariff not only can reach more fuel poor households, but also appears to be more cost-effective than cost-of-living payments. More specifically, our analysis shows that the energy social tariff we propose could reach and support twice as many households with the greatest risk of experiencing fuel poverty, namely those in lower-income couple households with two or more children and lone parent households, than the current cost-of-living payments can. Operationalising such a system, however, requires a reliable way for the government to identify low-income households, which is not straightforward.

<sup>10</sup> We acknowledge that the estimate performed here is very crude, as we have not taken into account the relevant administrative cost for each approach.